

Amended pages under Article 34 Amendment PCT

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a sensor device and communication between sensor devices and to collect the tire information detected by the sensors; and

transmitting the collected tire information from the base station to the car body side.

The sensor devices and the base station are connected to each other by electric wires, radio waves, light (visible light, ultraviolet light, infrared light) or optical cables.

According to a second aspect of the present invention, there is provided a tire information transmission method, wherein the sensor devices are each provided with a communication device capable of communicating only with the base station and other sensor device.

According to a third aspect of the present invention, there is provided a tire information transmission method, wherein a protocol different from a protocol used for communication between the base station and the car body side is used for communication between the base station and the communication devices.

According to a fourth aspect of the present invention, there is provided a tire information transmission method, wherein the sensor devices are driven by a radio wave transmitted from the car body

side.

According to a fifth aspect of the present invention, there is provided a device for transmitting tire information detected by sensors installed in a tire to a vehicle side, comprising:

a plurality of sensor devices, each comprising a sensor for detecting the condition of the tire, installed at predetermined locations of the tire; and

a base station, connected to the sensor devices, for processing signals indicative of the conditions of the tire detected by the sensors and transmitting the processed signals to the car body side, wherein

the sensor devices are each provided with a communication device for communicating with the base station and other sensor device to construct an intra-tire network for communication between the base station and a sensor device and communication between sensor devices.

According to a sixth aspect of the present invention, there is provided a tire sensor device, wherein the sensor devices are each provided with a communication device for communicating only with the base station and other sensor device.

According to a seventh aspect of the present invention, there is provided a tire sensor device, wherein the communication device of each sensor is provided with means of receiving a radio wave

Since the above sensor devices are each provided with a communication device for communicating only with the base station and other sensor device to construct an intra-tire network, the control of the sensor devices can be carried out by the base station not only for the collection of tire information but also for the selection and measurement of required tire information. When a protocol different from a protocol used for communication between the base station and the car body side is used for communication between the base station and the communication devices, incoherence of communication can be ensured and the leakage of the tire information to the outside can be prevented.

Further, since the communication device of each sensor is provided with means of receiving a radio wave transmitted from the base station to generate power voltage for driving the sensor, a power source for the sensor device is not required and the size of the sensor section can be reduced.

Since the sensors are controlled synchronously to measure a plurality of tire information data, required tire information can be selected and measured, or desired tire information can be measured at predetermined time intervals and transmitted to the car body side.

Since a sensor device having no sensor is installed so that detected tire information can be

What is claimed is:

1. A tire information transmission method comprising the steps of:

mounting sensor devices, each comprising a sensor for detecting tire information, at a plurality of locations of the tire;

mounting in the tire a base station for communication with the car body side which is connected to the sensor devices to construct an intra-tire network for communication between the base station and a sensor device and communication between sensor devices and to collect tire information detected by the sensors; and

transmitting the collected tire information from the base station to the car body side.

2. The tire information transmission method according to claim 1, wherein the sensor devices are each provided with a communication device capable of communicating only with the base station and other sensor device.

3. The tire information transmission method according to claim 2, wherein a protocol different from a protocol used for communication between the base station and the car body side is used for communication between the base station and the communication devices.

4. The tire information transmission method according to claim 1, wherein the sensor devices are driven by a radio wave transmitted from the car body side.

5. A tire sensor device comprising:

a plurality of sensor devices, each comprising a sensor for detecting the condition of a tire, installed at predetermined locations of the tire; and

a base station, connected to the sensor devices, for processing signals indicative of the conditions of the tire detected by the sensors and transmitting the processed signals to the car body side, wherein the sensor devices are each provided with a communication device for communicating with the base station and other sensor device to construct an intra-tire network for communication between the base station and a sensor device and communication between sensor devices.

6. The tire sensor device according to claim 5, wherein the sensor devices are each provided with a communication device for communicating only with the base station and other sensor device.

7. The tire sensor device according to claim 6,